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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/633,584	08/07/2000	Olivo G. Sivilotti	62801 CCD	3914

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EXAMINER

KERNS, KEVIN P

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 10/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/633,584	SIVILOTTI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Kevin P. Kerns	1725	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**P riod for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13,15-43,45 and 46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-13,15 and 16 is/are allowed.
- 6) ☒ Claim(s) 17-30,33-43,45 and 46 is/are rejected.
- 7) ☒ Claim(s) 31 and 32 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 35-43 and 45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to claim 35, it is unclear what limitations in the claim are pertaining to the nozzle itself, such that the nozzle is not being actively and distinctly claimed. It is suggested that the applicants provide further changes that would more clearly set forth the structural features of the nozzle as it relates to the larger apparatus (e.g. as a combination with either the belt cooling and guiding apparatus or the twin belt caster).

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 17-21, 25-30, 33, 34, and 46 are rejected under 35 U.S.C. 102(b) as being anticipated by Kush (US 5,363,902).

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Kush discloses a contained quench system in a twin belt casting apparatus, in which the casting apparatus has an array of point cooling nozzles (conduits 15 adjacent the casting mold, including conduits adjacent the casting mold entrance) for controlled cooling of a twin belt continuous casting machine, in which the apparatus further contains a vacuum system in communication with drain pipes, as well as a plurality of webs containing continuous elongated slots/grooves (chambers) of constant width that serve as cooling means and guiding supports that are transverse along the entire length of the (planar) reverse support surface of the casting belt (abstract; column 1, lines 6-10; column 3, lines 65-68; column 4, lines 1-28; column 5, lines 30-68; column 6, lines 1-35; and Figures 1-6).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kush (US 5,363,902).

Kush discloses all the elements of claim 18 above. Kush does not specifically disclose the width dimensions of the slot.

However, one of ordinary skill in the art would have recognized that the dimensions of the slots would be adjusted to conform to the water pressure (to obtain the fluid velocity), for the purpose of providing an optimum relationship between the belt, the water layer, and the nozzle faces. It would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the above parameters in view of Kush, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Control of these dimensions would be

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advantageous for relieving pressure and containing quenching fluid from longitudinally escaping along the belt surface (Kush; column 5, lines 30-68; and column 6, lines 1-35).

9. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kush (US 5,363,902) in view of Dumont-Fillon et al. (US 3,799,239).

Kush discloses all the elements of claim 18 above. Kush does not specifically disclose the use of a filter for filtering particles from the cooling liquid.

However, Dumont-Fillon et al. teach a method for continuous casting of metal in which a filter is used for providing fresh coolant and cleaning recirculated spent coolant prior to flow into the supply conduit, which is shown to be conventional in the art, for the purpose of filtering particles that would build up in narrow orifices of each nozzle, which would be detrimental to uniform cooling (column 2, lines 53-67; column 5, lines 57-67; and column 6, lines 1-2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the contained quenching system in the twin belt casting apparatus, as disclosed by Kush, by adding the filtering means of Dumont-Fillon et al., in order to filter particles that would build up in narrow orifices of each nozzle, which would be detrimental to uniform cooling (Dumont-Fillon et al.; column 2, lines 53-67; column 5, lines 57-67; and column 6, lines 1-2).

***Allowable Subject Matter***

10. Claims 1-13, 15, and 16 are allowed.

11. Claims 31 and 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. Claims 35-43 and 45 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

Claim 35 includes an allowable bevel limitation (in the last 3 lines of the claim) that would make these claims allowable if written as a combination with either a belt cooling and guiding apparatus or a twin belt caster (e.g. in a casting environment rather than a nozzle that lacks inventive structure -- see paragraph 2 above).

13. The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to teach or suggest a belt cooling and guiding apparatus that includes at least one elongated nozzle having a support surface that includes a bevel sloping rearwardly of the nozzle in a direction from a continuous longitudinal slot towards an adjacent outer edge of the nozzle (independent claim 1, dependent claim 31, and independent claim 35 -- if the rejection under 35 USC 112, 2<sup>nd</sup> paragraph is overcome).

***Response to Arguments***

14. The examiner acknowledges the applicants' amendment received by the USPTO on September 22, 2003. Claim rejections under 35 USC 112, 2<sup>nd</sup> paragraph, remain in paragraphs 1 and 2 above. Allowable subject matter is cited above. Claims 1-13, 15-43, 45, and 46 remain under consideration in the application.

15. Applicant's arguments with respect to claims 17-30, 33, 34, and 46 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Sivilotti et al. and Harrington references are also cited to show related art.

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the



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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin P. Kerns whose telephone number is (703) 305-3472. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (703) 308-3318. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Kevin P. Kerns  
Examiner  
Art Unit 1725

KPK  
kpk  
October 9, 2003



M. ALEXANDRA ELVE  
PRIMARY EXAMINER